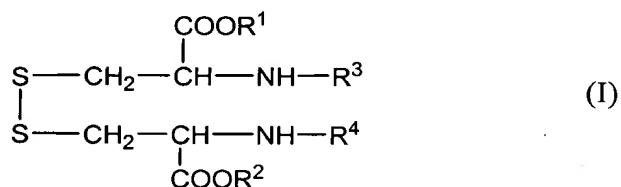


IN THE CLAIMS

The status of each claim is listed below.

Claims 1-79: Canceled.

80. (New) A method of inducing a Th2 response in a subject, wherein the subject is suffering from at least one of gastrointestinal inflammatory disease, hepatitis, or hepatic cirrhosis, comprising administering to the subject an effective amount of the cystine derivative represented by formula (I):



wherein

R^1 and R^2 , independently from each other, represent an alkyl group or a substituted alkyl group, and

R^3 and R^4 , independently from each other, represent an acyl group or a peptidyl group.

81. (New) The method of Claim 80, wherein the subject is suffering from gastrointestinal inflammatory disease.

82. (New) The method of Claim 80, wherein the subject is suffering from hepatitis.

83. (New) The method of Claim 80, wherein the subject is suffering from hepatic cirrhosis.

84. (New) The method of Claim 80, wherein the subject is also suffering from rheumatoid arthritis.

85. (New) The method of Claim 80, wherein the intracellular content of reductive glutathione is reduced to at most 0.1 nmoles of glutathione per 5×10^5 macrophage cells.

86. (New) The method of Claim 80, wherein administration of the cystine derivative (a) reduces the content of reductive glutathione in macrophages in the subject, (b) increases the capability of the macrophages to produce IL-6, and (b) decreases the capability of the macrophages to produce IL-12 and NO.

87. (New) The method of Claim 80, wherein the alkyl group has 1 to 12 carbon atoms.

88. (New) The method of Claim 80, wherein the acyl group has 1 to 12 carbon atoms.

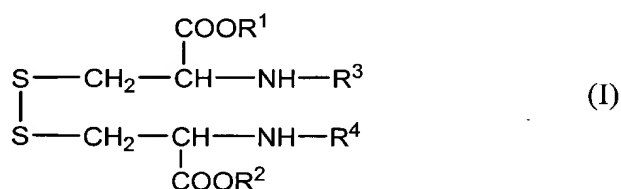
89. (New) The method of Claim 80, wherein the peptidyl group has 1 to 10 amino acids.

90. (New) The method of Claim 80, wherein IL-4 is also administered to the subject.

91. (New) The method of Claim 80, wherein TGF-beta is also administered to the subject.

92. (New) The method of Claim 80, wherein at least one substance which inhibits the production or the function of IL-12 is also administered to the subject.

93. (New) A method of inducing a Th2 response in a subject, comprising administering to the subject an effective amount of the cystine derivative represented by formula (I):



wherein

R^1 and R^2 , independently from each other, represent an alkyl group or a substituted alkyl group, and

R^3 and R^4 , independently from each other, represent an acyl group or a peptidyl group, wherein at least one of R^3 and R^4 is a peptidyl group having 1 to 10 amino acids.

94. (New) The method of Claim 93, wherein R^3 is a peptidyl group having 1 to 10 amino acids.

95. (New) The method of Claim 93, wherein R^4 is a peptidyl group having 1 to 10 amino acids.

96. (New) The method of Claim 93, wherein administration of the cystine derivative (a) reduces the content of reductive glutathione in macrophages in the subject, (b) increases the capability of the macrophages to produce IL-6, and (b) decreases the capability of the macrophages to produce IL-12 and NO.

97. (New) The method of Claim 93, wherein the intracellular content of reductive glutathione is reduced to at most 0.1 nmoles of glutathione per 5×10^5 macrophage cells.

98. (New) The method of Claim 93, wherein the subject is suffering from chronic rheumatoid arthritis.

99. (New) The method of Claim 93, wherein IL-4 is also administered to the subject.

100. (New) The method of Claim 93, wherein TGF-beta is also administered to the subject.

101. (New) The method of Claim 93, wherein at least one substance which inhibits the production or the function of IL-12 is also administered to the subject.

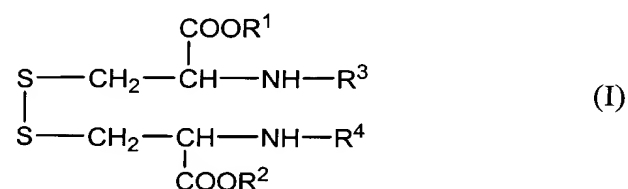
102. (New) The method of Claim 93, wherein the alkyl group has 1 to 12 carbon atoms.

103. (New) The method of Claim 93, wherein the acyl group has 1 to 12 carbon atoms.

104. (New) The method of Claim 93, wherein the peptidyl group has 1 to 10 amino acids.

105. (New) The method of Claim 93, wherein the acyl group is derived from a hydrocarbon carboxylic acid.

106. (New) A method suppressing cellular immune responses in a subject by skewing the Th1/Th2 balance to Th2, wherein the subject is suffering from at least one of gastrointestinal inflammatory disease, hepatitis, or hepatic cirrhosis, comprising administering to the subject an effective amount of the cystine derivative represented by formula (I):



wherein

R^1 and R^2 , independently from each other, represent an alkyl group or a substituted alkyl group, and

R^3 and R^4 , independently from each other, represent an acyl group or a peptidyl group.

107. (New) The method of Claim 106, wherein the subject is suffering from gastrointestinal inflammatory disease.

108. (New) The method of Claim 106, wherein the subject is suffering from hepatitis.

109. (New) The method of Claim 106, wherein the subject is suffering from hepatic cirrhosis.

110. (New) The method of Claim 106, wherein the subject is also suffering from rheumatoid arthritis.

111. (New) The method of Claim 106, wherein the intracellular content of reductive glutathione is reduced to at most 0.1 nmoles of glutathione per 5×10^5 macrophage cells.

112. (New) The method of Claim 106, wherein administration of the cystine derivative reduces the content of reductive glutathione in the macrophages in the subject.

113. (New) The method of Claim 106, wherein the alkyl group has 1 to 12 carbon atoms.

114. (New) The method of Claim 106, wherein the acyl group has 1 to 12 carbon atoms.

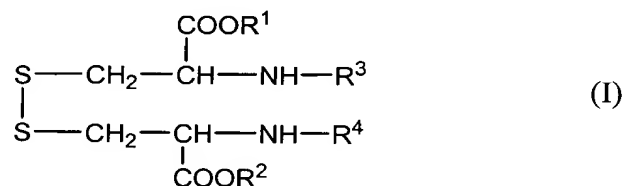
115. (New) The method of Claim 106, wherein the peptidyl group has 1 to 10 amino acids.

116. (New) The method of Claim 106, wherein IL-4 is also administered to the subject.

117. (New) The method of Claim 106, wherein TGF-beta is also administered to the subject.

118. (New) The method of Claim 106, wherein at least one substance which inhibits the production or the function of IL-12 is also administered to the subject.

119. (New) A method of suppressing cellular immune responses in a subject by skewing the Th1/Th2 balance to Th2, comprising administering to the subject an effective amount of the cystine derivative represented by formula (I):



wherein

R^1 and R^2 , independently from each other, represent an alkyl group or a substituted alkyl group, and

R^3 and R^4 , independently from each other, represent an acyl group or a peptidyl group, wherein at least one of R^3 and R^4 is a peptidyl group having 1 to 10 amino acids.

120. (New) The method of Claim 119, wherein R^3 is a peptidyl group having 1 to 10 amino acids.

121. (New) The method of Claim 119, wherein R⁴ is a peptidyl group having 1 to 10 amino acids.

122. (New) The method of Claim 119, wherein the subject is suffering from rheumatoid arthritis.

123. (New) The method of Claim 119, wherein administration of the cystine derivative reduces the content of reductive glutathione in the macrophages in the subject.

124. (New) The method of Claim 119, wherein the intracellular content of reductive glutathione is reduced to at most 0.1 nmoles of glutathione per 5×10^5 macrophage cells.

125. (New) The method of Claim 119, wherein the subject is suffering from chronic rheumatoid arthritis.

126. (New) The method of Claim 119, wherein IL-4 is also administered to the subject.

127. (New) The method of Claim 119, wherein TGF-beta is also administered to the subject.

128. (New) The method of Claim 119, wherein at least one substance which inhibits the production or the function of IL-12 is also administered to the subject.

129. (New) The method of Claim 119, wherein the alkyl group has 1 to 12 carbon atoms.

130. (New) The method of Claim 119, wherein the acyl group has 1 to 12 carbon atoms.

131. (New) The method of Claim 119, wherein the peptidyl group has 1 to 10 amino acids.

132. (New) The method of Claim 119, wherein the acyl group is derived from a hydrocarbon carboxylic acid.

Application No. 09/731,830
Reply to Office Action of April 6, 2004

SUPPORT FOR THE AMENDMENT

Newly-added Claims 80-132 are supported by the specification at pages 4-60 and original Claims 1-12. No new matter is believed to have been added by the amendment submitted above.